THE FUTURE BELONGS TO THOSE WHO PREPARE FOR IT*

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In examining the future for U.S. agriculture, and the cattle industry within it, it is worthwhile to speculate not only about what might happen but also about who might cause things to happen; to think not only about cattle, but also about cattlemen and their competitors.

I am reminded of the old story about the traveling salesman who asked the farmer to put him up for the night. The farmer told him he could sleep with the baby or he could sleep in the barn, and the salesman elected to sleep in the barn. The next morning he climbed out of the haymow and headed for the wellframe, brushing hay out of his hair and getting set to rinse up and go in for breakfast. At the pump he found the farmer's handsome daughter, and with his best professional smile he greeted her and asked her who she was. She said, "Hi, I'm the baby. Who are you?" And he said "I'm the dumbbell that slept in the barn last night."

That story illustrates my meaning. You see, all of us are well informed about our handsome agriculture. We are like the farmer and his daughter. And it has been true through the long history of our sheltered agriculture that it

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has been largely ignored by a knowledgable urban business community which, like the traveling salesman, has only recently learned that agriculture is an innocent beauty. What we need to ask ourselves about that salesman who discovered his error is whether he is dumb enough to make the same mistake twice. It would be wise to concede that he is not.

Let us examine, therefore, the attributes of this farmer's daughter, and the enlightenment of the traveling salesman. This paper is divided into two parts. The first part deals with trends and projections for the 1970's. The second part deals with the more conjectural matter of participation and control by 1980.

Trends and Projections

My brief examination of trends and prospects is illustrative rather than all-inclusive. For convenience it is arranged under headings concerning size, efficiency, and technical developments. Some important aspects of industry change are omitted or overlooked by this arrangment. Except in the matter of size, the discussion is limited to probable directions of change rather than to probable levels of achievement by 1980.

Increased Production and Consumption

The beef industry in the United States is going to grow rapidly and steadily during the 1970's.[1/] In examining the extent of this growth, perhaps

1/ In a preliminary examination of 1970 Census data, U.S. Department of Agriculture (USDA) personnel determined that January 1 cattle inventories may have been underestimated during the past five intercensus years, and that a two percent upward adjustment may be needed. There had been an earlier concern that consumption trends and herd expansion requirements were in conflict and that one or the other would have to give. If the revised estimate is accurate, then herd expansion and consumption trends could both pursue an uninterrupted course through the Seventies.

the best place to start is with projections for beef consumption in 1980. A reason why this is a good place to start is because so few estimates are required and because such reliable effort is applied in making them.

The Bureau of the Census of the U.S. Department of Commerce estimates 1980 population in the United States at 228 to 235 million people [3]. The U.S. Department of Agriculture estimates that these people will consume beef and veal in 1980 at the rate of 130 pounds per capita [1,4,11]. There are now less than 210 million people, each consuming on an average about 115 pounds of beef and veal.[2/] If 235 million people each consume 130 pounds of beef and veal in 1980, and some suspect the forecast is conservative, that would total 30.55 billion pounds.

How much domestic production does this require? Two assumptions are necessary in converting domestic consumption to domestic production. One concerns imports; the other concerns military consumption. The USDA has assumed the continued existence of present beef import legislation and has made the conversion by subtracting 7 percent from consumption to allow for imports, and adding 650 million pounds for military consumption [4,9]. This yields a 1980 domestic production estimate of 29.2 billion pounds (Table 1). About 24.0 billion pounds would be fed beef, and here we encounter the dimensions of the challenge that confronts us.

This is an enormous amount of beef and veal. It represents at 35 percent increase over 1968, and an actual tonnage increase of more than seven billion pounds in 12 years. It took 14 years, from 1954 to 1968, to achieve

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2/ There is of course substantial variation around this average. California consumption is much above the national figure, having been estimated (USDA) in 1970 at 140 pounds per person, approximately 23 percent above the national average. If California were to maintain this relative position for ten years, per capita consumption in 1980 would approximate 160 pounds.

the last increase of those proportions (Table 2). Although we now have a larger base from which to start, we will not so easily accomplish the same objective in 12 years more, for at least two reasons. The first of these is that cattle feeding increased enormously during 1954-1968, from 39 percent to 66 percent of total cattle slaughter (Table 2). Today it is probably true that over 90 percent of all steer and heifer slaughter is fed beef. We cannot get another easy increase in production by finishing more steers and heifers; we are already feeding nearly all of them. The second reason is that during 1954-1968 we got an easy increase in beef production by killing dairy cattle. In those years we reduced our January 1 dairy cattle inventory from 36 million head in 1954 to less than 22 million head in 1968 (Table 2). The dairy inventory cannot again support a similiar reduction. We probably could not get more than another 7 million head reduction in the dairy population by 1980 (Table 3).

What this means is that we have our job cut out for us. We have used up our easy expedients. Yet 30.55 billion pounds of beef can be consumed in 1980. The market is there and, unless we plan to give it away to porkchops, broilers, soybeans and imports, that domestic production will have to occur. How can this be accomplished?

Obviously, the required increase in domestic production will have to come from (1) expanded beef breeding herds, (2) from increased technical efficiency, and (3) from increased marketing and management efficiency. And, lacking the easy expedients, these increases will depend on an attentive concern for neglected skills that someone will have to apply. Here are some illustrations:

Improvements in Technical Efficiency

The beef industry of the Seventies will surely be characterized by an ever-present pressure for faster and bigger weight gains. There will be an insistance on still more quantity and still less waste, permitting no compromise on quality attributes already attained. The Seventies will reward higher calving rates, heavier weaning weights, bigger cattle, better feed conversion, and less carcass fat. These are technical improvements that do not require basic research. An animal scientist recently estimated a billion dollar saving to the beef industry by diligent application of neglected skills and available knowledge [15]. As illustrations he cited the poor exercise of husbandry and management skills reflected in calving and weaning rates. He pointed out that calving rates have increased only 4 percent, from 84 to 88, in the past quarter-century, and he doubted that calves raised per hundred cows bred exceeded 80. Then he said that for every 100 cows bred, 40 required two matings, and 16 required three matings or more. More than 156 matings result in 80 or less calves weaned. He estimated that a 2 percent increase in calving rates alone could save the industry a quarter-billion dollars. Surely we must concede that this record speaks poorly for our application of management and husbandry skills.3/

Other improvements in technical efficiency do require basic research. These include such things as multiple births, feeding bulls, and genetic control of sex. Our Ohio agricultural experiment station is now engaged in research intended to predict by 1985 the sex and genetic potentials of unborn offspring.

3/ According to some friends of mine who favor import restrictions, this remark is unfair and I should know better. What counts, I am reminded, is not to devote time to saving calves, but to employ that time wherever it can be used most profitably, whether that is savings calves or raising crops. But if this is the case, then dare we insist that Americans must consume domestic beef production? Might they insist that they will consume the beef production of men who do not have a better use for their time?

Yet all the technical improvement cannot alone yield the required seven billion pounds of increased production. Other things must also occur, and these will include:

Improvements in Marketing Efficiency

Retailers hold the balance of bargaining power in livestock and meat marketing today.[4/] This means that they can be persuasive in encouraging supplier performance and in obtaining the production that meets their specifications. Retailers are also sensitive to consumer demands. Their pressure on suppliers, and the competitive pressures to which they subject each other, encourages a continuing search for better marketing performance, by which all competitors hope they may survive. Among meat packers, whose principal cost of doing business is the cost of the livestock they buy, this kind of pressure translates readily into an unrelenting pressure on livestock producers to provide the kind of livestock that packers are increasingly obliged to deliver. This has caused ill will and resentment among many producers and market operators who feel that forty years of attendance at county fairs has already instructed them in the kind of livestock that win the ribbons. But it is an unfortunate fact that what continues to win the ribbons at many a rural gathering is the sort of cattle that no longer wins much applause from retail meat department managers [14].

Packers who find resistance among market operators and independently-inclined small producers turn increasingly to direct purchases from larger,

4/ Documentation of this shift in power is widespread in agricultural marketing literature and much of it is summarized in [16]. In addition to contributing factors rooted in policy, technology, or structural changes in marketing, conditions of chronically abundant supplies of agricultural products which readily substitute for one another also have strengthened the bargaining position of retailers relative to that of their suppliers [7, page 49].

more commercially-motivated feedlots. Between 1960 and 1969, direct cattle purchases by meatpackers rose from 39 to 62 percent of all purchases [8]. Accompanying these direct sales has been a rise in the use of carcass weight and grade pricing. Hardly used in 1960, this method accounted for 20 percent of all cattle purchased in 1969 [8].

I think these adjustments in marketing during the 1960's are a modest illustration of changes to come. I expect the 1970's to witness more explicit retail pressure, more federal grading of carcass cutability, central packaging for retail stores, increased formula pricing and contracting, more relocation of the packing industry at interior points convenient to commercial feedlots, and increased integration of carcass buying between producers and packers [14, 16, Chapter 30]. Yet with all these changes in marketing and in production, seven billion pounds will not likely emerge without:

Changes in Government Programs

Changes in marketing are accompanied by changes in government programs. Consider market news, Federal inspection, and Federal grades.

As direct marketing increases, producer needs for market information become more critical, for example, while the terminal-based reporting ability of government to provide that information becomes less adequate. A shift to country market news reporting would hardly be adequate or timely; not only is it demanding of men and money, it can be introduced only into a country marketing system that is itself being bypassed in favor of growing direct sales. One would suppose that market news reporting might become centered on the purchaser, that is the packer of retailer, and that reporting emphasis would shift from live animals to more carcass pricing.

During the Seventies we will also be moving into a system of packing-house operations in which all are operated under a Federal inspection code, in accordance with The Wholesome Meat Act of 1968. Under this arrangement, inspectors might assume some additional responsibilities beyond the enforcement of inspection standards. For example, they might oversee the carcass identification process in title transfers based on carcass-priced direct sales between the producer and the packer. History records that third-party presence is required for this function in order to satisfy buyers and sellers alike [16, page 676]. Perhaps the inspector or his designate could oversee this process.

The pressure for greater production efficiency,for more rapid rates of gain,may also translate into pressure for Federal government to amend the established live and carcass grades. Of what importance is a continuing insistence on youth if all fed animals are young, and of finish when all are fed? Will other sorts of distinctions emerge and need to be considered? For example, what discrimination against young bulls can be justified? Surely grading and standardization will come under careful scrutiny in the Seventies. Still, more changes will emerge because all these developments will insistently require major:

Changes in Methods and Beliefs

These will emerge from stress in an industry that is stretching all its skills and capacity, trying to hold a burgeoning market that is too lucrative to be left for beef alone to capture. Competitors will struggle for part of the market. These will include other meats, other markets, synthetics and substitutes, and these require some change in methods and beliefs. Synthetics and feedlots provide illustrations.

Increasingly appealing synthetics will be brought to the market in the Seventies. No doubt many of them will be introduced by firms with no background in agriculture and no conviction that people have an abiding preference for natural foods. To them it will seem that people who can prefer their medicine from a lab instead of from nature can also have similar notions about some of their food. This is a major change in method and belief. But it is less threatening to the beef industry than the industry's own convictions about the preferred status of its natural product.

Consider broilers. Maybe 20 years ago it seemed apparent to all who watched the strange things happening in broiler production that these were occurring only because broilers were uniquely different than the rest of animal agriculture. Today, less than 50 firms control two-thirds of the broiler production, and uncontracted, independent production accounts for less than 10 percent. Yet ten years ago, when this revolution was well advanced, it remained idle to suppose that commercial cattle feedlots could also someday be a serious, competitive threat.

But today, less than one percent of U.S. feedlots produce over half of all the fed beef, and less than three dozen lots produce nearly 10 percent of it [13]. This is rather a frightening development. Perhaps one reason it is frightening is because this was accomplished by strange people with strange skills that are not explained in Morrison's Feed and Feeding. They understood leverage as well as livestock and financing as well as feeding; they were people who found cash flow more interesting than cash payment,

and integration more rewarding than independence. In the beef industry, these are major adjustments in methods and beliefs. The industry is changing.

Will All This Really Happen?

Now I suppose it would be legitimate to ask, with some skepticism, whether all these things will really occur? This is insisting on a very large amount of change indeed. Will it really happen? Maybe one way of answering the question is to look back a few years and see where we were then and what kinds of change we anticipated when we stretched our imagination.

Did we advocate the wisdom of buying $200 cropland in 1945? Were we prepared for the speed with which the broiler industry came upon us, or the rate at which it evaporated from the family farm and became a factory business? Even by 1960, after it had happened, did anyone suppose it could be repeated in cattle and hogs? As I recall, everyone supposed not. But last year, there they were; 34 feedlots producing ten percent of all the fed beef, and less than one percent of all the feedlots in the land producing over half of it [13].

Agricultural production is concentrated in the hands of a few large operations in many agricultural products [6]. In 1964 less than 3600 vegetable growers made more than 80 percent of all vegetable crop sales. Less than 7500 operations realized three-fourths of all field crop sales. Less than 20,000 poultry producers of all kinds, and about 8100 fruit and nut producers, accounted for two-thirds of all the farm sales in those products. Less than 6000 ranches accounted for 64 percent of all ranch sales receipts, and more than half of all cotton sales went to 13,000 operations in 1964 (Tables 4-5).

In 1955 Fortune Magazine assessed the agriculture of 1980, a quarter-century hence. In a major staff article, the magazine estimated, among many things, the decline in the number of farms that the quarter-century would bring. Yet the attrition rate that actually occurred was so unexpected and so severe that the predicted 25-year figure was reached in five years, by 1960.

During the last Census decade, 1955-1965, the only farms that increased in number were those of 500 acres or more. One of every four cash grain farms ceased to exist during those ten years. So did one of every three dairy farms, and half the poultry farms, and two-thirds of all the cotton farms; they are gone. Today less than 10 percent of our farms and ranches produce more than half of all the agricultural output, and less than three percent of them produce nearly a third. In 1966 an economist estimated that by the use of existing technology, if we really applied what we already know, over 90 percent of all farm output could be the product of 100,000 farms [10].

Just a year ago two other economists startled us with possibilities that have escaped our notice. They spoke of the family farm, a subject close to the hearts of us all. It is well known that there still remain nearly three million farms in the U.S. today. But these economists wanted to know the production plant of commercial, family-farm agriculture. So they subtracted out the retired farms, the part-time farms, the plaything farms, the big corporations, and all those similar operations we all concede, and they arrived at a startling figure. Owner-operated commercial family farms that receive most of their income from farming may number as little as 200,000 [5].

If all the rest is wishful thinking, what then of the family farm and its independent owner?

Who Will Do These Things?

This brings me to the second and shorter part of this paper. I have made some forecasts for the beef industry that I do think will occur. I think the forecasts are conservative. I do not doubt that the beef industry will grow, and I think it will achieve the dimensions I have indicated. But I cannot assure you that you will be part of it because I do not know you.

But if you are like some cattlemen I do know I worry about your future. The cattlemen I know are independent men and they are proud of that. They are resourceful, imaginative, honest, ambitious, practical, enterprising, honorable men. But they are independent and proud of it. And for these commendable attributes they are admired by fellow citizens, all the more if by necessary circumstance an admiring public is obliged to live urban lives of quiet desperation. The urban image of the cattleman is found in the Marlboro cigarette ads, which unfailingly depict a resourceful, purposeful fellow, practical, capable and independent. The Ideal American Type. The urban man is proud to be a fellow citizen and, unable to be the man he admires, at least can attest his admiration by smoking the right kind of cigarettes.

It is not by accident that the Marlboro ad achieves its purpose. The ad depicts a heritage, a national character, a type we were and hope we are. But we are changing and we know we are changing; and by necessary circumstance,

As a nation we are no longer agricultural and rural and independent. We are industrial and urban and interdependent, and proud of the accomplishment, and regretting the cost. It is the regret that sells the cigarettes.

It is not harmful, most people would say, to admire The Ideal American Type; it is harmful only to believe it. The Golden Rule is OK, they acknowledge, but he that hath the gold maketh the rules. A man's word is his bond, alright, but get it in writing nevertheless. Money may not be everything, they agree, but it's ahead of whatever is in second place. It is no longer how you play the game, but whether you win or lose.

Yes, people will concede, those perversions of a national character are part of the cost and a source of the regret but, they will ask, how much commitment to the alternatives can you afford? New attitudes emerge from the circumstances in which people find themselves. Most people with survival in mind are in circumstances very different from yours, and their attitudes are the attitudes of the salesman who slept once in the barn. What shall we say to the cattleman? What can we say of the cash grain farmers, the cotton farmers, the dairy farmers and chicken farmers, all those who disappeared? Shall we say they were admired? Surely they deserve something for by and large they were honorable men and they sort of died for an honorable cause. They were independent and proud of it.

That salesman would tell us that the day of the independent man is done, and we would disdain him for that belief and dislike him for telling us what we do not want to know. We do not agree. We insist that the day of the independent man is not done. But we have our secret doubts, when with pride and

regret we watch 300,000 interdependent men working in perfect harmony, performing a precise ballet that puts a few men on the moon and completes million-mile journeys in space that are off by a quarter-mile and eleven seconds in as many days.

It is indeed a constrast to our agricultural preference. We lose half our army in a decade while the other half indulges the honor of its independence. We do this at a time when science and technology and intense competition push all of us to specialize in this or that which we do best. General farmers become cash grain farmers or cattle feeders or otherwise adopt a specialty on which they pin their hopes. And it comes about that feeders who fatten cattle no longer want the same thing as the man who raises grain, and the man who raises beef sees a threat in the man who raises hogs, and cattlemen come to think the only honorable men are other cattlemen.

So all join different producers' organizations and proceed to quarrel among themselves. All this happens in an urban, industrial world in which the farmer or rancher now has very little more votes than Indians had a hundred years ago. Yet he disenfranchises himself in intermural warfare while urban-elected politicians stand by appalled to witness warfare among those to whom they feel they ought to turn for advice. And so, consistent policy formulations not forthcoming from the contending parties, policy is hammered out by urbanites whose knowledge of agriculture is less than thorough and whose agricultural interests reflect an urban need. The price of unyielding agricultural commitments to a mixed lot of narrowly-focused hopes was spelled out for us six years ago by another economist who had just returned from a

year of policymaking among the urbanites. He said:

> "If the agricultural establishment cannot develop the leadership that is capable of seeing the situation as it really is and adjusting to it, then it not only will fail to survive in any meaningful form but it will deserve its death. And the headstone erected by an urban society will read:
>
> 'The Agricultural Establishment of the United States:
> Its Promise Exceeded its Performance
> And Falling Into Social Irrelevance
> It Took Its Own Useless Life
> R.I.P."[2].

Is this the price of unyielding independence? While the Marlboro man looks good in the ads someone is stealing his horse? In the name of survival is independence worth compromising? Not only are policymakers forced by our own default to turn to their own devices, but the salesman is chasing the daughter? Let us examine this stranger, this outsider, this sophisticated and quite legitimate intruder.

He is an urban and interdependent man, at home in the business community, a cosmopolitan member of many groups reflecting many skills. He may know little about a farm, but much about finance. Crops may confuse him but cash flow does not. Poultry may not excite him but pure profit does. Livestock may leave him cold, but liquidity and leverage and law do not. He learned his ABC's on Accounting and Banking and Credit. When it comes to handling insurance and shifting risk, organizing ventures and cultivating contacts, he knows more in a minute than we know in a month. Because his world is as competitive as yours, and more powerful, he is looking for new opportunities to exercise his skills, and he has discovered your handsome daughter.

Yet this organization man is a good fellow. He has no evil intent. He heartily wishes the best for you. He even assumes that you do as well in your world as he does in his. Compared to yours his world is only different,

but in matters we have neglected it is sophisticated and powerful, and in your world of independence and innocence he finds his world of opportunity. He has been described in that recent bestselling book The Money Game:

> "...there may not be enough Gelusil and tranquilizers to serve (these men) with their triggers filed hair thin...(They) can be very good company, just as diplomats or foreign correspondents or any other group that represents a cross of disciplines can be. They have to be alert, they must keep constantly scanning for changes in the environment and for new ideas, because literally anything that happens can have an effect on all that money. They have to be good brain pickers, and a good brain picker is usually alive enough to be a good dinner companion."[12].

Examine him and his friends: Very good company, but with triggers filed hair-thin; bringing goodwill like diplomats, good dinner companions, and alive; but good brain-pickers nevertheless because literally anything that happens can affect all that money.

Reflect a little: Does that also sound like you? Are you a cross of disciplines? Are you a good brain-picker in a strange crowd? Is your trigger filed hair-thin? Are you constantly scanning? Are you a member of many groups of different skills? Or is it that you prefer a close circle of friends whose views are similar to your own, who share your distrust for these intruders, and who lament the changes these strangers are bringing to your world?

We cannot deny him admission; he is already among us. He is coming to ask you again for the night and he is not going to sleep in your barn. He has discovered his error. He has been uninterested in your world only because he has been uninformed. Now he knows better. His trigger is hair-thin, he is constantly scanning, he is a brain-picker, he is good company,

and he admires your style. But he likes your daughter even more.

Like any farmer's daughter, the cattle industry is quite capable of running off and marrying this stranger. She wants to go where the action is. Between the two of them they could threaten you with a grim choice between being a reluctant father-of-the-bride, or being a bitter - and lonely - old man.

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There is a large insurance corporation which has as its motto: The Future Belongs To Those Who Prepare For It. That motto paraphrases the content of this paper. The first part of it has tried to foresee some future characteristics of an industry, its size, its capabilities. The second part has asked more than it can answer. It has inquired about preparation for the future, and it has wondered to whom, by virtue of their preparation, the industry will belong.

Gentlemen, I hope it will belong to you.

Table 1: A Speculative Look At Beef Production In The United States In 1980 1/

	Million head	Million pounds
Total Cattle and Calf Slaughter	48.6	48,925
Cattle slaughter	45.3	48,200
Calf slaughter	3.3	725
Cow (and bull) slaughter	9.0	9,200
Steer and heifer slaughter	36.3	39,000
Domestic Beef and Veal Production		29,200 2/
Beef production		28,800
Veal production		400
Fed beef production		24,000

1/ Numerous assumptions have been employed, including: All steer and heifer slaughter is fed beef, up from 90 percent in 1969 [9]. Fed cattle account for 80-83 percent of cattle slaughter and (due to heavier weights) 82-85 percent of beef production [11]. Liveweights approximate 1065 for all cattle, 1075 for fed cattle, 1025 for cows (including bulls), and 220 for calves. Dressing percentages approximate 59.7 for all cattle, 61.5 for fed cattle, 52.0 for cows (including bulls) and 55.0 for calves.

2/ Based on domestic consumption of 30,550 adjusted for military consumption (+650) and imports about 7 percent of domestic production (-2000).

Item	Unit	1954	1969 2/	Percent of 1954	1980 1/	Percent of 1969
January 1 Inventory						
All cattle and calves	Thous. hd.	95,679	109,661	114.6	127,500	116.3
All dairy cattle	do.	36,161	21,610	59.8	16,000	74.0
Dairy cows	do.	23,896	14,123	51.9	10,500	74.3
All beef cattle	do.	59,518	88,051	147.9	111,500	126.6
Beef cows	do.	25,050	36,097	144.1	45,000	124.7
Beef calves	do.	17,978	27,920	155.3	36,000	128.9
Beef steers and heifers	do.	14,594	22,216	151.6	30,000	135.0
All cows	do.	48,946	50,220	102.6	56,000	111.5
		1954	1968	Percent of 1954	1980	Percent of 1968
Annual Production						
Total cattle & calf slaughter	Thous. hd.	39,159	41,024	104.8	48,600	118.5
Cattle slaughter	do.	25,889	35,413	136.8	45,300	127.9
Calf slaughter	do.	13,270	5,611	42.3	3,300	58.8
Cow slaughter	do.	8,800	6,850	77.8	9,000	131.4
Steer & heifer slaughter	do.	16,440	27,655	168.2	36,300	131.3
Fed cattle marketings	do.	10,200	23,304	228.5	36,300	155.8
Beef and veal production	Mil. lbs.	14,610	21,577	147.7	29,200	135.3
Beef production	do.	12,963	20,842	160.8	28,800	138.2
Veal production	do.	1,647	735	44.6	400	54.4
Fed beef production	do.	5,319	14,909	280.3	24,000	161.0
Avg. liveweight of cattle sltr.	Pounds	922	1,012	109.8	1,064	105.1
Avg. dressed wt. of cattle sltr.	do.	502	590	117.1	636	107.8
Ratios						
Dressing percentage	Percent	54.3	58.2		59.8	
Fed cattle sltr./cattle sltr.	do.	39.4	65.8		80.1	
Fed cattle sltr./steer & hef. sltr.	do.	62.0	84.3		100.0	
Beef & veal production/Jan. 1 total cow No.'s	do.	29.8	42.9		52.1	

1/ 1980 figures are conjectural estimates by the author. They are not carefully developed projections and do not represent official forecasts by the author or The Ohio State University.

2/ Jan. 1970 cattle and calf inventory 112.3; beef cattle and calves 91.1 (old definition); 1970 steer and heifer slaughter 28.6.

Source: 1980 estimates by the author. Data for other years are found in [9, page 21].

Table 3: A Speculative Look At January 1 Cattle Inventories In The United States In 1980 1/

	(Millions of head)	
All Cattle and Calves		125-130
All Dairy Cattle		15-17
Cows (and bulls)	10-11	
Calves	5-6	
All Beef Cattle		109-114
Cows (and bulls)	44-46	
Calves	35-37	
Steers and heifers	29-31	
All Cows (and bulls)		55-57
All Calves		40-43

1/ Numerous assumptions have been employed: Beginning with a USDA estimate for all cattle and calves at 125-130 million [11, page 34], subsequent figures are rough trend projections with two constraints: (1) Numbers must accommodate production figures employed in Table 1, and (2) Numbers must reflect percentages or trends therein evidenced in past series. For example, steers and heifers account for a plausible percentage of beef calves, of beef cows, and of all beef cattle; calves reflect plausible percentages of cow numbers, etc. Comparison with other years may be made from data in Table 2.

Table 4: Number of Large Farms By Type and Size, 1929, 1959, and 1964

Type of farm	1929 large[1]	1959 class I[2]	1964 large[3]	1964 class I[2]
	Number			
Vegetable	785	2,730	1,590	3,577
Other field crops	699	4,011	2,237	7,334
Poultry	225	11,151	4,744	19,249
Fruit and nut	1,924	6,547	2,511	8,103
Miscellaneous	101	3,830	1,644	5,034
Ranches	1,829	6,757	1,815	5,921
Cotton	441	13,171	3,465	13,033
Livestock	453	29,439	6,692	35,116
General	50	4,775	1,884	8,783
Cash Grain	486	10,828	2,141	19,301
Dairy	882	8,538	2,576	15,463
Tobacco	---	322	102	1,000
Total	7,875	102,099	31,401	141,914

[1] Farms with sales of $30,000 or more in 1929, which is comparable with $48,600 in 1959 and $48,450 in 1964.

[2] Class I: Census of Agriculture farms with sales of $40,000 or more.

[3] Farms with sales of $100,000 or more. They are part of the total number of class I farms.

Source: [6].

Table 5: Concentration of Farm Production By Type and Size, 1929, 1959, and 1964

Type of farm	1929 large[1]	1959 class I[2]	1964 large[3]	1964 class I[2]
	As Percentage of Total			
Vegetable	20.0	73.3	67.1	81.4
Other field crops	5.1	55.8	49.1	73.7
Poultry	3.3	55.4	38.0	67.9
Fruit and nut	19.9	45.1	46.7	67.6
Miscellaneous	1.0	62.1	44.6	65.4
Ranches	29.2	59.8	46.5	64.0
Cotton	1.4	46.8	31.3	55.2
Livestock	2.1	33.9	26.8	46.8
General	.2	20.7	18.3	33.6
Cash grain	1.8	16.7	6.4	23.9
Dairy	3.0	15.3	9.9	23.4
Tobacco	---	3.9	3.9	8.2
Total	5.0	32.8	24.8	43.7

[1] Farms with sales of $30,000 or more in 1929, which is comparable with $48,600 in 1959 and $48,450 in 1964.

[2] Class I: Census of Agriculture farms with sales of $40,000 or more.

[3] Farms with sales of $100,000 or more. They are part of the total number of class I farms.

Source: [6].

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